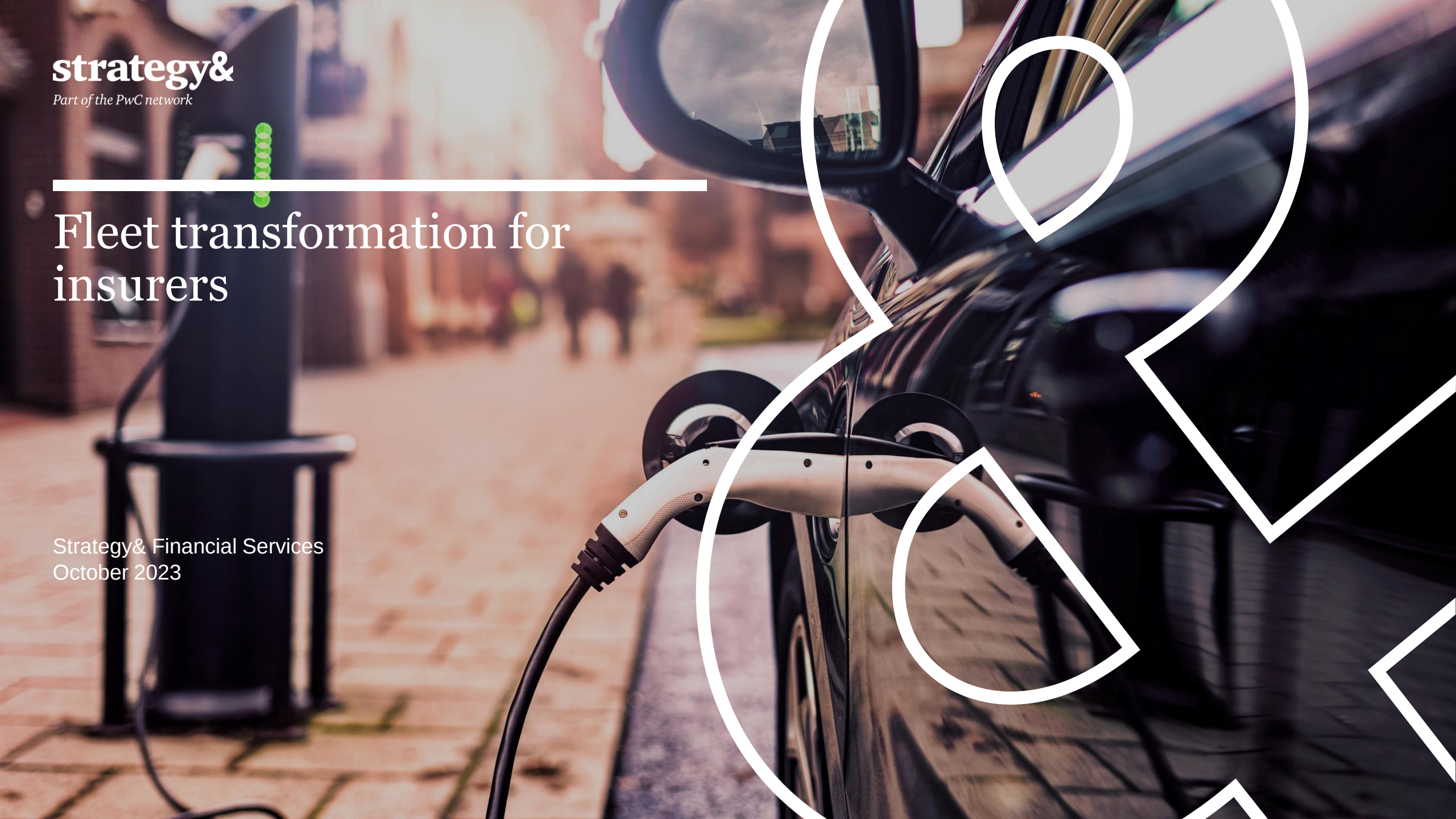

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Part of the PwC network

Fleet transformation for insurers

Strategy& Financial Services
October 2023

Content

1 Insurers’ starting point

2 BEV market perspective

3 Specific requirements and challenges for insurers

4 How to tackle fleet transformation

5 Strategy& approach and experience

1 Insurers' starting point

Insurers have set themselves **ambitious CO_2 reduction targets** – **fleet and mobility are decisive levers** in reducing Scope 1 and 2 emissions[1]

Fleet transformation: Insurers have no time to lose

Responsibility – Insurers have committed to become carbon neutral in Scope 1 and 2[1] emissions by 2025. In addition, they have a social responsibility to act as role models.

Sustainability – Fleets are ideally suited for the transition to battery electric vehicles (BEVs) and offer huge potential for decarbonization and value creation. Business mobility in the insurance industry is responsible for 40,000 tons of CO_2 emissions a year.[2]

Market – BEVs have achieved functional parity with the internal combustion engine and are the more economical and socially acceptable choice.

Charging infrastructure – A mix of charging options tailored to fleet needs minimizes costs and charging times, while maximizing range and driving experience.

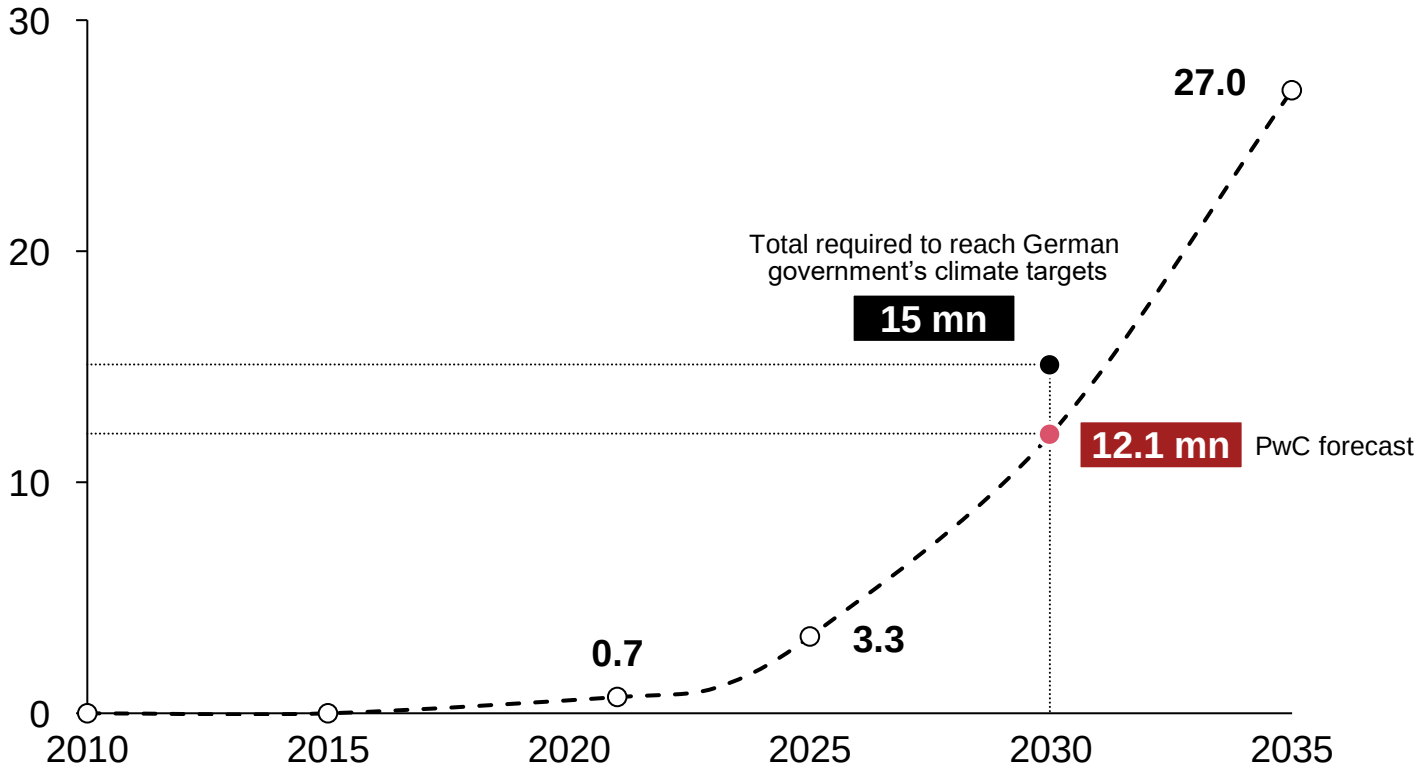
Timing – This is a good moment to push fleet transformation – delivery times have improved, new models are coming to market and prices have moderated.

1) Environmental scope of ESG. Scope 1 emissions cover emissions that the company directly makes, e.g. with its vehicles. Scope 2 emissions are made indirectly and include the emissions that are emitted during the generation of energy requested by the company. 2) Source: KBA; if only cars are used

Demand for battery EVs is insufficient to meet Germany's climate targets

Shortfall to reach close to 3 million by 2030

Battery EV "gap" in the German market (millions of vehicles[1])



Insurers have a social responsibility and should act as **drivers of change** instead of waiting. They must choose **intelligent transformation strategies** to meet their commitments on sustainability. In addition, they must take into account the **"war for talent"**: **more than 50% of potential German e-vehicle drivers** say that offering electric cars **makes future employers more attractive**[2].

1) Source: PwC Strategy& analysis
2) Source: EVBox Mobility Monitors

2 BEV market perspective

3-4 months

delivery time for BEVs from car manufacturers

It's a good time to push fleet transformation – delivery times have recovered

Selected manufacturer and brand EVs

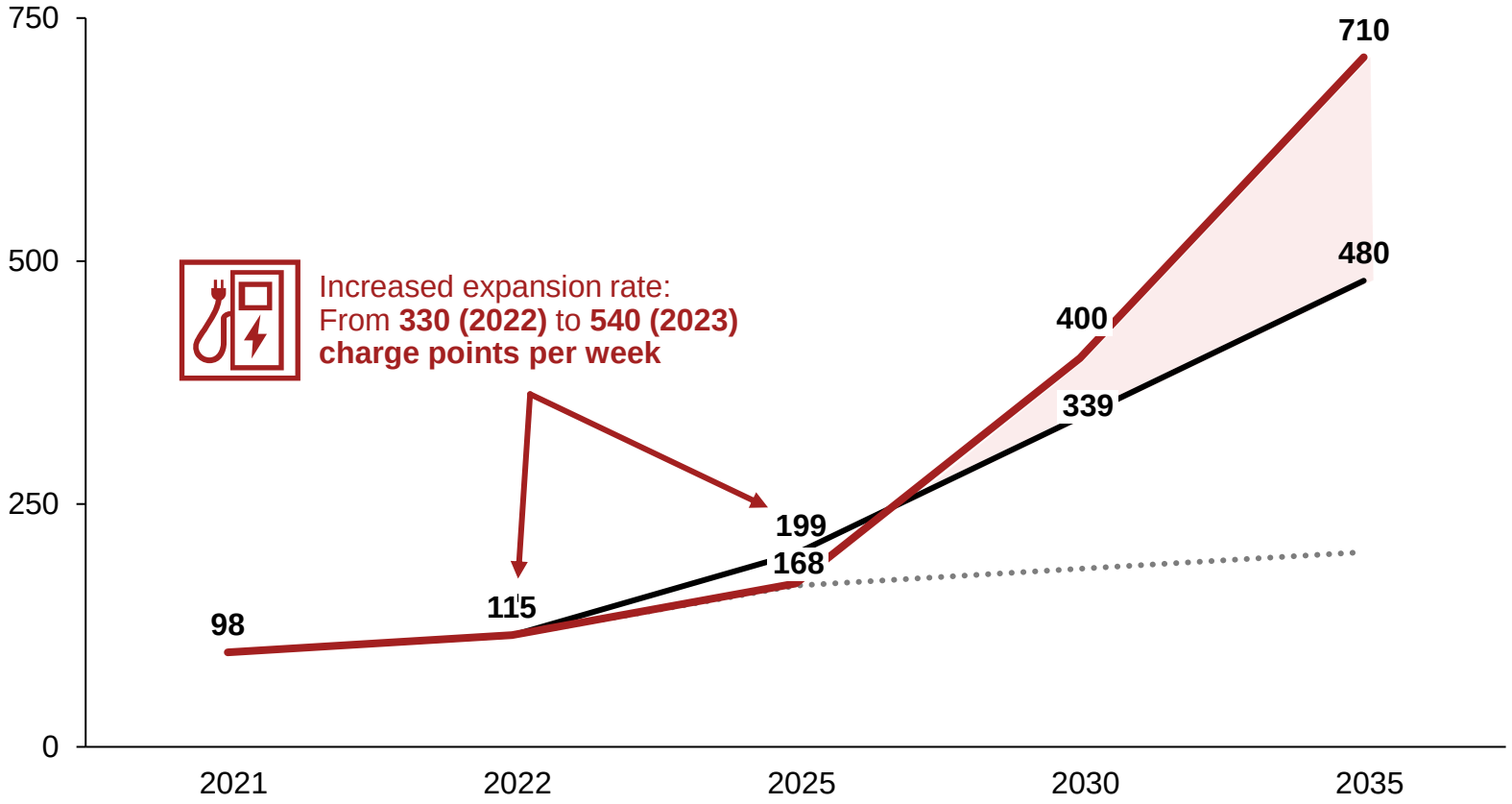
Manufacturer / Model[1]	Gross list price	Range[2]	Charging time[3]	Delivery time
Audi Q8 e-tron	from 74,400 EUR	from 420 km	27 min.	6 months
BMW i4	from 56,500 EUR	from 430 km	31 min.	4 months
Mercedes EQE	from 67,187 EUR	from 515 km	33 min.	4 months
VW ID.3	from 39,995 EUR	from 350 km	32 min.	4 months
Tesla Model Y	from 47,567 EUR	from 350 km	25 min.	3 months
Volvo EX30	from 36,590 EUR	from 280 km	27 min.	1 month
Hyundai IONIQ 6	from 43,900 EUR	from 365 km	17 min.	10 months
MG MG4	from 34,990 EUR	from 300 km	37 min.	3 months
BYD HAN	from 70,805 EUR	from 475 km	44 min.	3 months

Source: EV-Database; Carwow

1) All vehicles are shown with basic equipment and the smallest battery
2) Indication of real-world range in several situations (worst-case to best-case)
3) Fast-charging (DC) time from 10% to 80% capacity

Expansion rate of public charging points in the medium term will not keep up with rising BEV numbers – further efforts are required

Forecast: Demand for and supply of public charging points to 2035 [000s]



Market overview:

- **Charging infrastructure** today is generally **sufficient** – however, there is a **high proportion of AC charging points**
- The current increased rate of expansion still leads to a **gap of 230,000 charging points by 2035**
- Wider access to **high-performance charging** is required to close the demand gap. This will also **improve convenience.**
- But further measures to make charging **more convenient** are also needed

Sources: PwC analysis, "Nationale Leitstelle Ladeinfrastruktur"

3 Specific requirements and challenges for insurers

A successful transition to CO_2 neutral fleets will require insurers to find solutions to multiple challenges

Key challenges

Macroeconomic

- **Market dynamics** – technological progress in both BEVs and charging infrastructure necessitates a flexible approach
- **Volatile energy markets** – limited certainty in cost outlook (fuels and electricity)
- **Availability of vehicles** – current delivery times vary depending on manufacturer and model

Company specific

- **OEM portfolio in fleet management** – German vs. global OEMs
- **Standardization** – heterogeneous model range leads to increased complexity in procurement and fleet management
- **Charging infrastructure** – lack of standardization in charging infrastructure inhibits acceptance of electrification
- **Uncertain benefits** – lack of transparency on projected annual costs and potential savings
- **Individual mind shift** – prejudice against electrification and BEVs, especially in sales organizations
- **Operationalization** – integration of new OEMs and service providers, delivery of vehicle and charging infrastructure

Insurance specific

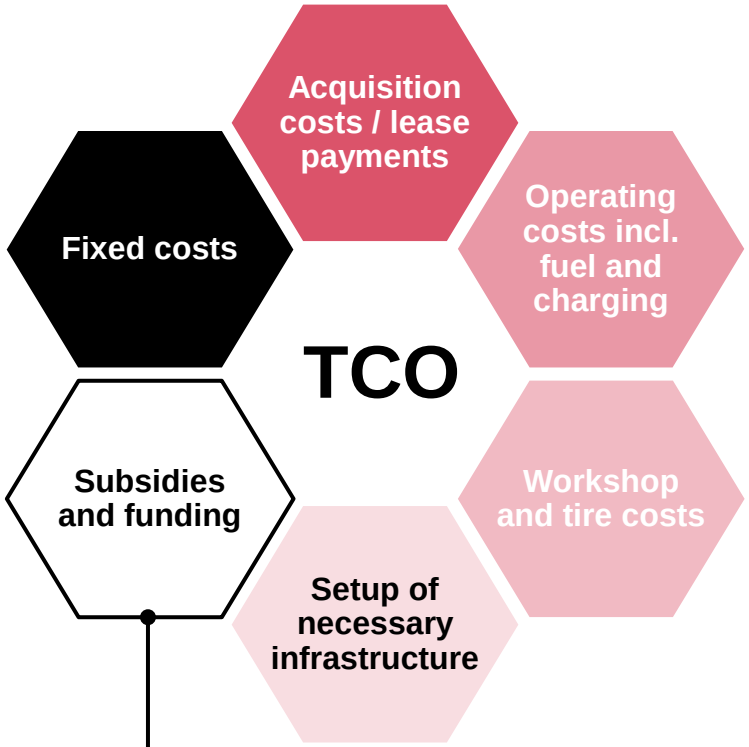
- **Differing requirements** – executives vs. employees (e.g. sales, claims)
- **Driving behavior** – differing range profiles, partly long distances and destinations outside urban areas
- **Charging behavior** – sales staff that spend little time at headquarters require remote charging solutions
- **Age profile and attitude** – older employees tend to prefer to wait and see with regard to e-mobility
- **Choice of vehicles** – vehicle itself and brand perception are a high priority

Particularly addressed in the following

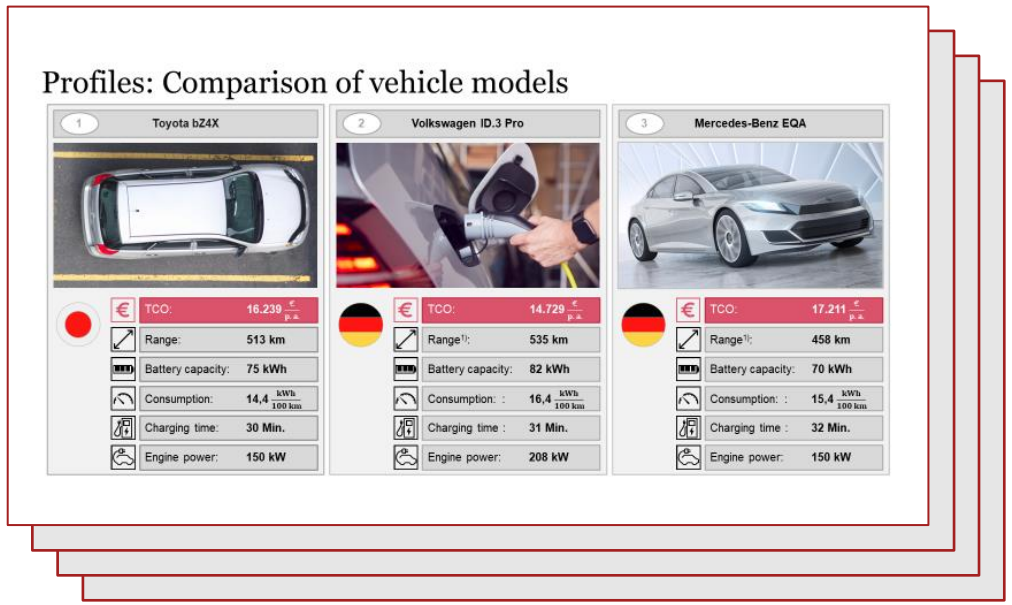
4 How to tackle fleet transformation

Total cost of ownership analyses offer a basis for recommendations to transform the company fleet

TCO[1] components and vehicle profiles as a basis for decision-making



including **acquisition premiums**, **environmental bonus**, **manufacturer premiums**, sales from **GHG quotas** and **tax incentives**

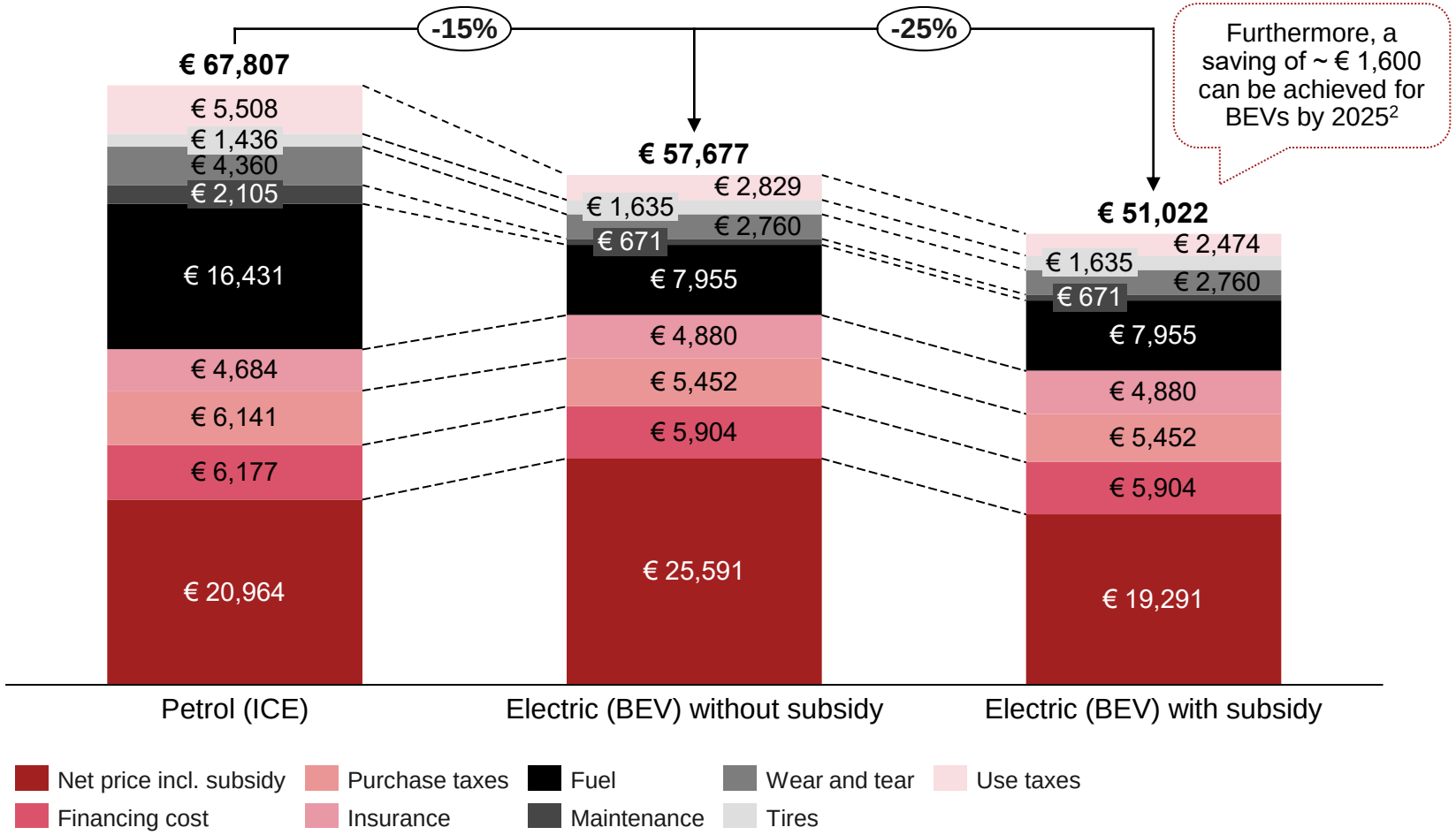


- **Comprehensive overview** of **vehicles and TCO** based on individual acquisition costs
- **Consideration** of **various parameters** in the decision-making process to take into account important factors in the **insurance context** (e.g. brand preferences and perception)
- Progress to **concrete transformation scenario** based on further fleet analyses (e.g. vehicle change, predicted mileage)

1) “Total Cost of Ownership”

Despite increased electricity costs, BEVs retain a 25% cost advantage thanks to subsidies and high residual values

Analysis: Average TCO per drive type over ten model pairs, 5 years and 150,000 km[1]



Key facts:

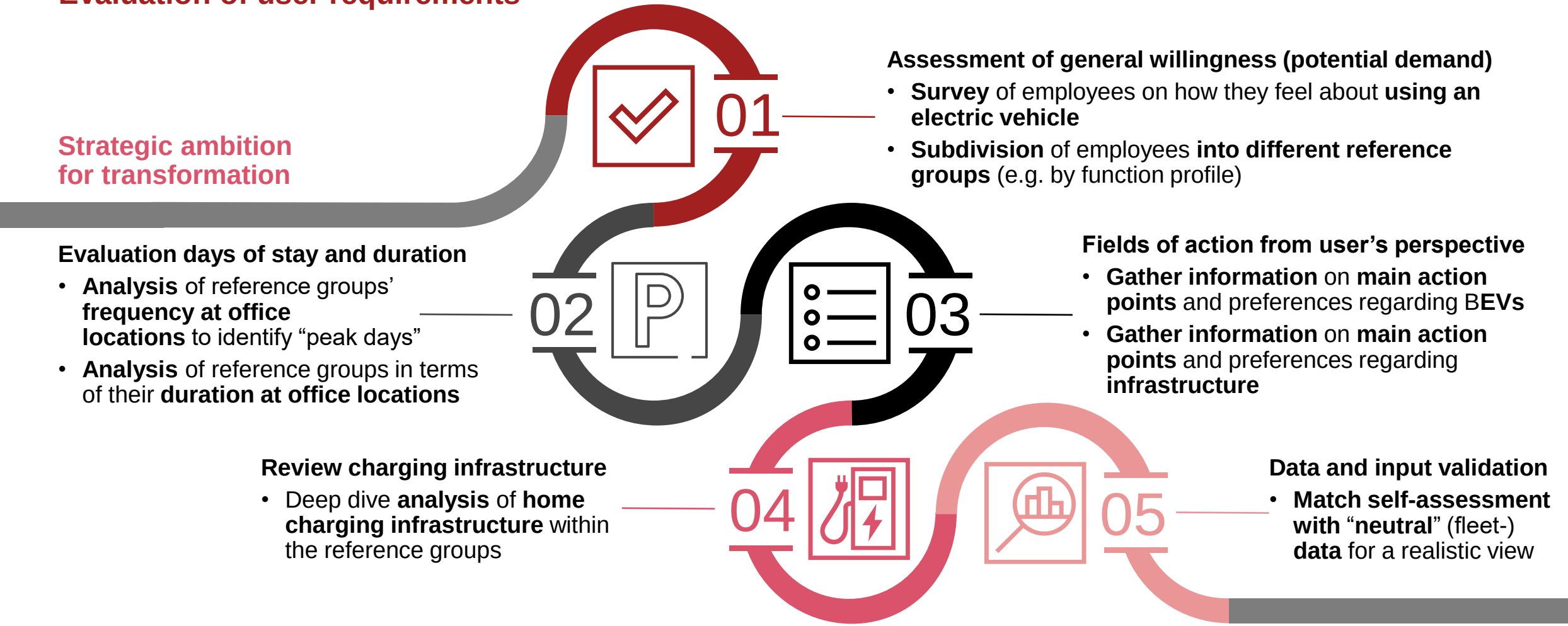
- Average TCO for electric vehicles **(€ 51,022) 25% lower** than vehicles with internal combustion engines (ICE) **(€ 67,802)**
  - **Increased resale value** due to stronger residual values for BEVs
  - Despite previous increases in energy prices, **fuel costs for BEVs[3]** are less than **half** those of ICE vehicles
  - **Financial incentives** for vehicle purchase[4]
- Even **without subsidies**, BEVs retain a **15% TCO-advantage** – end of incentives will not stop the cost-benefits of BEV

1) BEV = BMW iX3, Citroën e-C4, Cupra Born, Mercedes-Benz EQA, Mercedes-Benz EQB, Opel e-Mokka, Peugeot e-2008, Renault Mégane E-Tech, VW ID.3, VW ID.4; ICE = BMW X3, Citroën C4, Mercedes-Benz GLA, Mercedes-Benz GLB, Opel Mokka, Peugeot 2008, Renault Mégane, VW Golf, VW Tiguan | Source: Autovista (as of 12/2022)
2) Based on expected CO_2 price of € 100 by 2025 (DIW calculation) and WLTP CO_2 emissions of BMW320i 3) PwC forecast on charging prices: Future price decreases due to expansion of renewable energy generation (in real prices) 4) End of financial incentives for corporate customers by October 2023

A detailed user consultation helps to understand the requirements, pain points and levers

Evaluation of user requirements

Strategic ambition for transformation



Assessment of general willingness (potential demand)

- **Survey** of employees on how they feel about **using an electric vehicle**
- **Subdivision** of employees **into different reference groups** (e.g. by function profile)

Evaluation days of stay and duration

- **Analysis** of reference groups' **frequency at office locations** to identify "peak days"
- **Analysis** of reference groups in terms of their **duration at office locations**

Fields of action from user's perspective

- **Gather information** on **main action points** and preferences regarding B**EVs**
- **Gather information** on **main action points** and preferences regarding **infrastructure**

Review charging infrastructure

- Deep dive **analysis** of **home charging infrastructure** within the reference groups

Data and input validation

- **Match self-assessment with "neutral"** (fleet-) **data** for a realistic view

Development of driving journey

In the insurance industry, there are two different types of driver and company car user, with major differences

Different user types

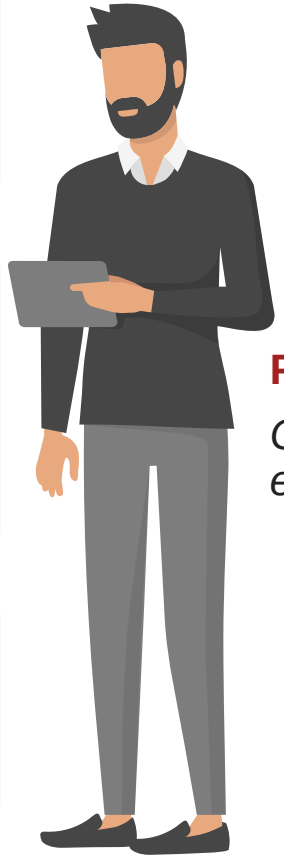
Executive

Christine

Chief Information Officer

	Executive	Staff member
General approach	I think **electric mobility is the future**, it's a great technology and a step forward. I **hope my new electric company car will come soon**.	Basically, I think battery **EVs will become established**, partly for climate reasons. At the same time, **I still see some challenges** to make them a **workable choice for me**.
Driving profile	During the week, **my journeys are usually about 50 kilometers**. I **drive to the office**, stay **there most of the day** and go to the gym after work. **From time to time** I drive **longer distances**. I will **charge my car mainly at work**.	I spend a **significant share of my day in the car**, as I drive to the various major claims to assess them. I **visit different customers** sometimes with stops at home. I would appreciate a wallbox at home so I could start the day with a fully charged car.
Main concerns	As a board member, I also **have representative duties** that should be reflected in my car. I am **open- minded to international brands** with a good reputation	My **biggest concerns** are **range and charging**. My schedule is tight, I **can't spend an hour at a charging station**. I need a practical solution to get my **daily business** done.

Staff member



Fabian

Claims expert

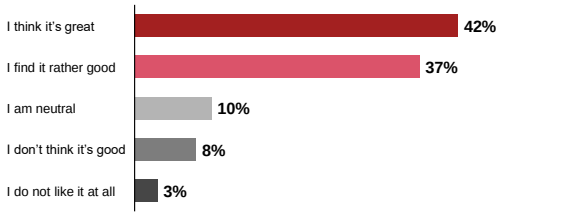
A user survey provides information on individual preferences and behavior – data validation confirms compatibility with BEV ranges

A sample assessment

The assessment of board members and office managers shows high compatibility for BEVs as company cars

Exemplary assessment – Board members and managers internal services

Assessment of general willingness (potential)



Evaluation days of stay and duration

Length of stay at the location

Number of days spent in the office	0-1 hours	1-2 hours	2-4 hours	4-8 hours	8-12 hours	n.a.
0 days	2%	0%	0%	0%	0%	0%
1-2 days	0%	0%	0%	1%	8%	0%
3-4 days	1%	0%	3%	7%	63%	1%
More than 4 days	1%	0%	2%	0%	11%	0%
n.a.	0%	0%	0%	0%	0%	0%

Comments

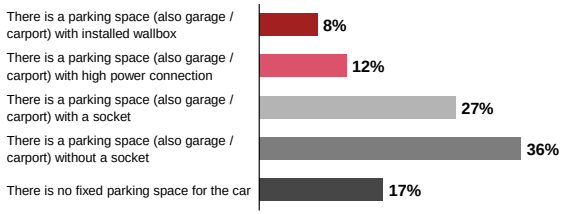
- There are **no** major **differences in** the **willingness to use an electric car** – generally **high willingness of >80%**
- **Significant differences** exist **in attendance at the office**
- **Board members** and **internal managers** are **at** the **office regularly** and **for longer periods** and can take **advantage of charging infrastructure**
- The "**outdoor staff**" (sales and claims) **drives longer distances** and are dependent on range, are rarely at the location and do **not use** the **charging infrastructure provided by** the **insurer**

Fields of action from user's perspective

- **> 85% neutral or in favor of E-mobility** – rather **negative opinion** on **Chinese manufacturers**
- **Most important requirements** regarding **range**, **charging time**, **trunk volume**, and **comfort**
- **Frequent travel**, but **rarely long distances** (350+ km a day)

- **High presence in** the **office**, therefore **use of local charging** infrastructure **possible** with sufficient charging points onsite
- **Charging** at **home partially possible**, but **less critical to success** due to short (<50 km) routes to office[1)]
- **Public charging infrastructure requires billing rules** (esp. relevant for longer, private journeys)

Review charging infrastructure



Insurers' urgently needed fleet transformation
Strategy&

1) Billing rules to be defined for home charging
Source: Strategy& survey, 750 participants (insurance employees)

September 2023
26

Comments

- **Survey** about **general willingness**, driving and charging **behavior**, need for charging infrastructure at home and **individual preferences**
- **Data validation** is essential: **kilometers driven** are **compatible with BEV ranges** in the majority of cases – subjective assessment of daily mileage often differs significantly from actual data
- **Taking employee concerns seriously** is key for acceptance of the transition to fleet electrification (especially when talking with works councils)
- Results show: generally **high willingness to use BEVs**, **however**, those required to drive for their role have particular **concerns** about range and non-European manufacturers

The user group-specific customer journey illustrates the need for holistic charging infrastructure due to different daily routines

Examples of users' driving patterns

Illustrative driving journey

Home w/o charging *(till 07:30 am)*

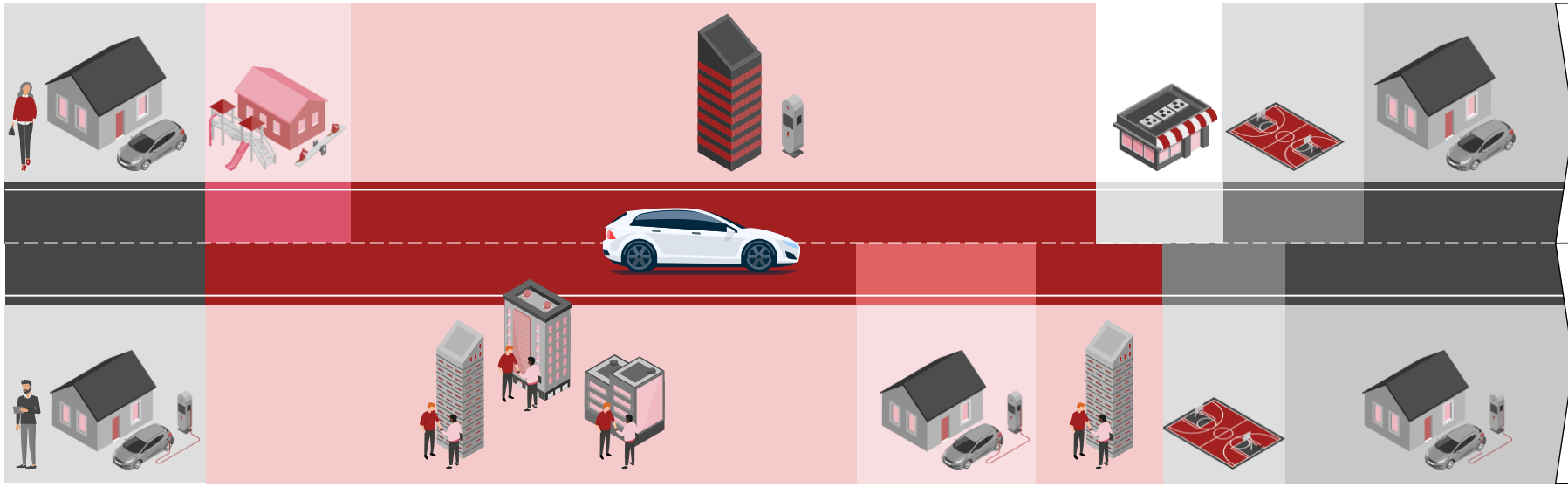
Kinder-garten *(short stop)*

Office incl. charging *(08:15 am – 06:00 pm)*

Groceries *(06:10 pm – 06:40 pm)*

Sports *(06:45 pm – 07:45 pm)*

Home w/o charging *(from 08:00 pm)*



Home incl. charging *(till 07:30 am)*

Client visits *(08:30 am – 03:00 pm)*

Home office incl. charging *(03:20 pm – 04:40 pm)*

Client visits *(05:00 pm – 06:30 pm)*

Sports *(06:15 pm – 07:00 pm)*

Home incl. charging *(from 07:15 pm)*

Consequence

Christine with a lot of time on site in the **office**

Charging at work is important

Fabian with a lot of time at **customer** sites and in his **home office**

Charging at home is important

For both, supplementary **public charging is essential** (AC and DC)

Need for a holistic and user-centered approach to charging infrastructure

A holistic approach to charging infrastructure is essential for fleet electrification and helps ensure employee productivity

Holistic offer on charging infrastructure

The individual offer for charging infrastructure needs to be thought holistic and address the different user needs

Holistic offer for charging infrastructure – use cases @public, @work, @home

Charging infrastructure concept and offer for employees

Individual living situation and suiting charging solution		@home: Wallbox Update	@home: Wallbox Installation	@public: public charging card	@work: On site charging
Wallbox available	1.1 – Wallbox meets requirements	✓	✓	✓	✓
	1.2 – wallbox doesn't meet requirements		✓	✓	✓
	1.3 – Shared parking space (no individual wallbox)		✓	✓	✓
	1.4 – …		✓	✓	✓
No wallbox available, installation possible	2.1 – own parking space with electricity connection		✓	✓	✓
	2.2 – own parking space without electricity connection		✓	✓	✓
	2.3 – Shared parking space with electricity connection		✓	✓	✓
	2.4 – Shared parking space without electricity connection		✓	✓	✓
	2.5 - …		✓	✓	✓
No wallbox installation possible	3.1 – no own charging possibility (e. g. street parking)			✓	✓
	3.2 – installation after check not possible			✓	✓
		A	B	C	D

A Update Wallbox
Usage of exiting infrastructure – integration of the Wallbox into the existing or newly created network

B Installation Wallbox
New installation of the wallbox with definition of a model and decision on assumption of installation costs and ownership structure

C Charge @public
Access to public charging infrastructure and selection of a service provider with nationwide availability and under consideration of further aspects (e. g. charging and blocking fees)

D Charge @work
Determination of the authorization concept for use of the on site charging infrastructure – planning and expansion of the infrastructure according to demand

Insurers' urgently needed fleet transformation
Strategy&

September 2023
20

Important steps for the right infrastructure model

- **Comprehensive charging** offer for **different user needs** – decentralized charging infrastructure of particular importance for those whose role requires them to drive regularly
- Enabling **consumption-based billing** with availability of **ESG data** for charge at home (instead of paying a flat rate)
- Clarification of **ownership** issues regarding the **wallbox** and determination of **legal and tax implications**, including implications of maintenance and service of the wallbox
- Selection of a **service provider** according to individual requirements (e. g. nationwide access to public infrastructure, no blocking fees for overnight parking, holistic offer including at work and at home)
- Establishment of a **simple**, **lean** and **user-centered process** from provision of the charging solution to billing for electricity across all use cases

5 Approach for a successful fleet transformation

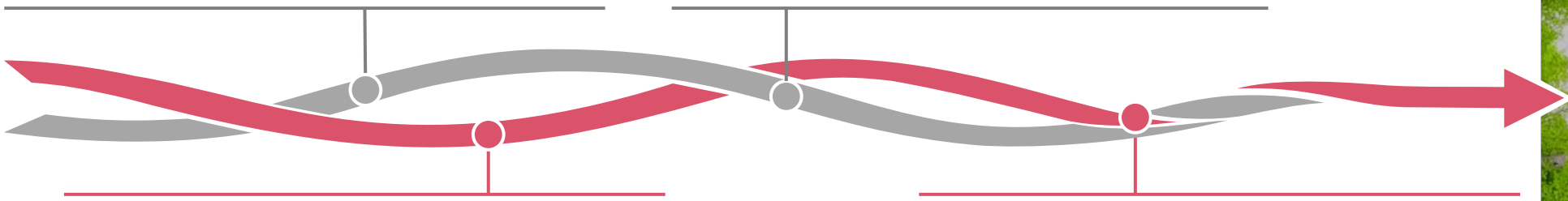
Insurers can benefit from a proven approach to supporting fleet electrification and achieving climate goals

Recommended approach

Analysis	Solution development	Goal

1. **Review preliminary work**
2. **Analyze current fleet portfolio** (mileage, age)
3. **Conduct survey of user needs** (driving behavior, charging behavior)
4. **Analyze market** (OEMs, models, technical data)

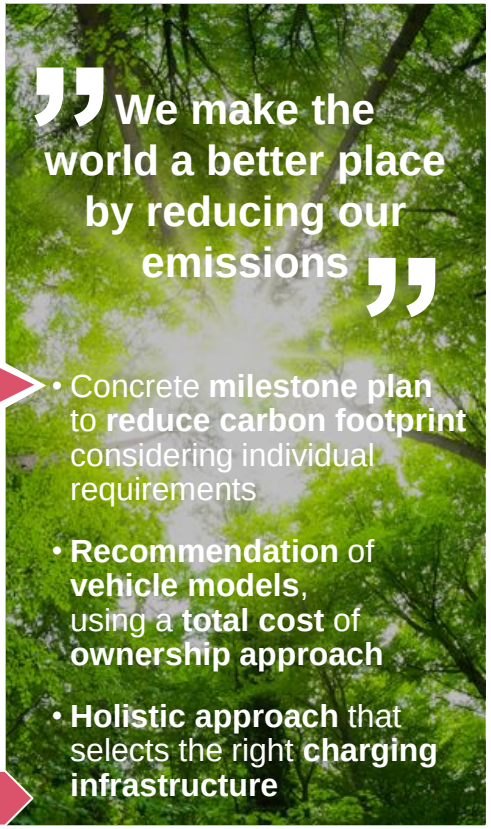
8. **Set up a model** for demand-oriented selection of **BEV portfolio**, considering individual criteria (e.g. user needs)
9. **Select vehicle models** for each target group suiting individual requirements (e.g. range, charging time, brand perception, ergonomics)



5. **Define prioritization criteria** (cost, emissions, user needs, risk, …)
6. **Decide financial options** (e.g. buy vs. lease)
7. **Assess funding, taxes and regulation**

10. **Develop** a **simulation** of **fleet electrification** with **implications** for **costs** and **emissions**
11. **Develop roadmap** for **implementation**

In parallel: Analysis and solution development for charging infrastructure



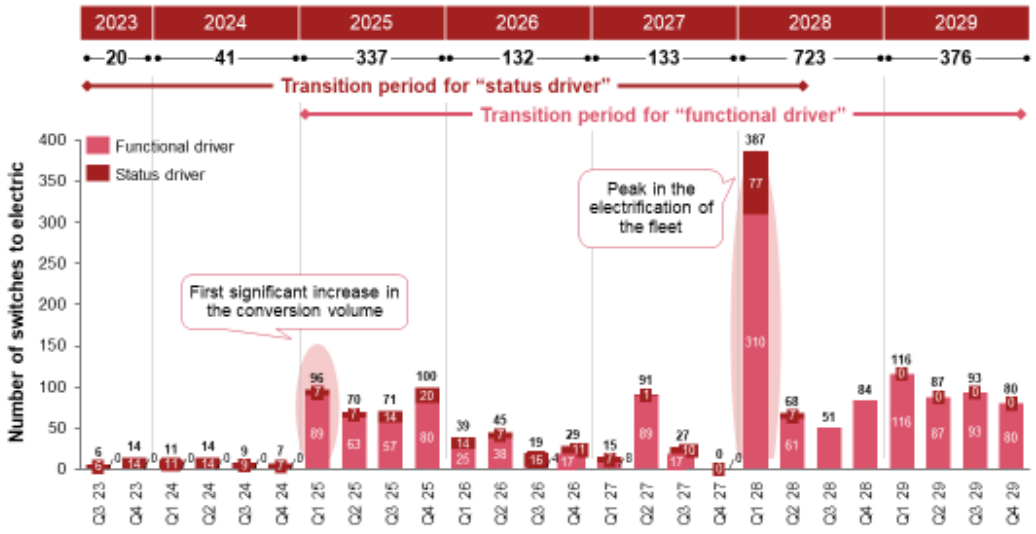
A dedicated simulation for fleet electrification offers guidance on CO_2 neutrality and transparency of future demands

Modelling supports development of a transformation roadmap

Detailed roadmap simulation as a baseline for the transition – peak of switches planned in Q1 2028

Exemplary assessment – transition roadmap

Number and timing of switches to electric vehicles[1)]



Remarks[1)]

- **~ 75%** of the **transformation** will take place **by 2028**
- **2023 & 2024** with short **start-up phase** ("status driver" only) with ~ 60 **switches**
- With the switch of **status drivers** in **2025**, the **volume will increase significantly** – e-vehicles must be available in sufficient numbers
- **2028 peak** of switches with **~ 720 vehicles** – almost 400 vehicles switches planned in Q1 alone
- **Preparatory measures** are already being **initiated** today to ensure that the process runs **smoothly** and that the **objectives are achieved**

Insurers' urgently needed fleet transformation
Strategy&

1) Exemplary based on Strategy& survey

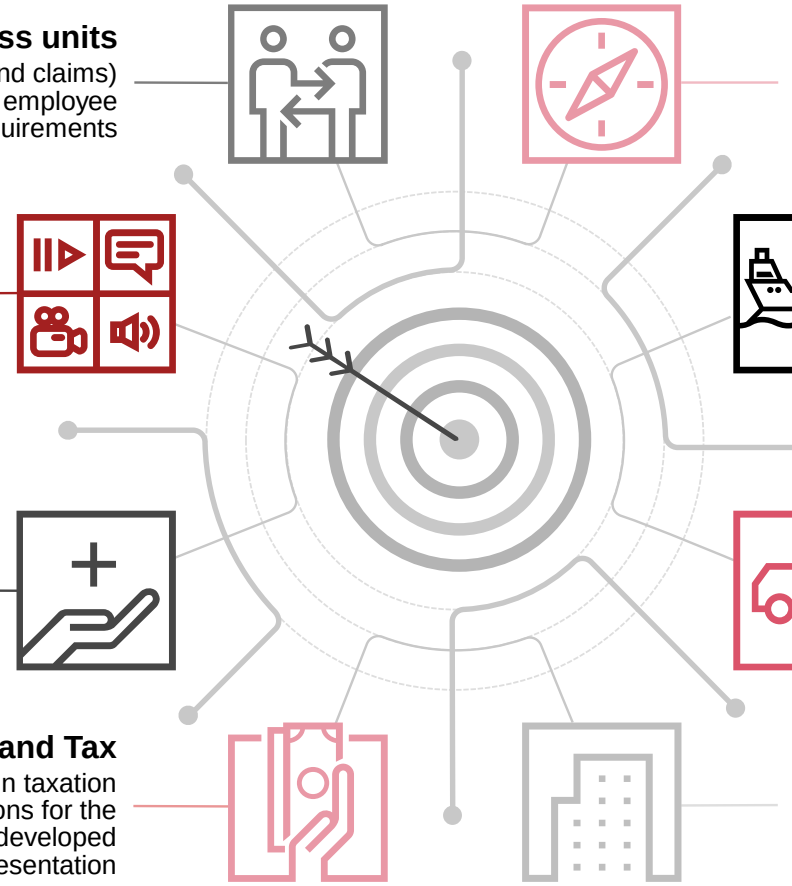
mber 2023

Comments

- **Development** of a **dedicated simulation** of **fleet electrification** with **implications** for **costs** and **emissions**
- **Development** of **measures** and a **timeline** for successful transition
- **Requirements** at the **start of conversion:**
  - **BEVs** must be **available in sufficient numbers**
  - **Plan** for **charging infrastructure** must be developed (public, at work, at home)
  - **Processes** for providing the solution must be **available**
  - **Background processes** such as billing for new charging solutions must be **defined** and **working**
- Ensure success by **piloting the solution** through a **volunteer program**

Fleet transformation should be understood as a company-wide mission involving many parts of the organization

Holistic transformation approach



Business units

Involvement of business units (especially sales and claims) to strengthen willingness and assess employee requirements

Top Management

Top management is not only affected by the transformation itself, but also acts as a pioneer and exemplar. At the same time, they must be involved in decisions regarding further changes and progress

Change Management and Communication

Many employees feel an emotional connection to the car they drive. So the fundamental change must be accompanied by targeted change management and communication to show benefits and give certainty

Procurement

Procurement is key to the vehicle purchasing process, which is a major transformation challenge. Long-term supply contracts must be agreed and modified, new partners and suppliers may be added

Human Resources

Use of company cars is a major contractual part of employment. With the transformation, company-wide agreements, as well as accounting, contracts and data in HR systems must be adjusted (e.g. for taxation, changes in users)

Fleet Management

Fleet management is crucial in the implementation of the transformation from ICE to an EV fleet. It has an overview of current usage, driver preferences, etc. It serves as a central point in the transformation

Finance and Tax

The fleet transformation will result in significant changes in taxation and financial compensation. Contractual/financial solutions for the switch from petrol station cards to home charging must be developed together with HR, fleet management and employee representation

Facilities Management

The transformation to EVs brings new requirements for facilities management especially with regard to parking and charging infrastructure at office sites.
In addition, support can be provided for charging infrastructure at home[1]

1) General offer for technical implementation, further aspects to be considered for private infrastructure, e.g., housing for rent

Fleet transformations are disruptive programs with four key success factors

Success factors for the conversion to an electric fleet

Change story and transparency

- Creating **transparency** about the **contribution to sustainability** (e.g. CO_2 dashboard)
- Ongoing communication and support with a **positive change story** – making e-mobility a tangible experience at an early stage (e.g. “e-mobility day”)
- Actively countering prejudices (e.g. myth busting, information guide on charging options)

Active involvement of the target groups

- Active involvement of target groups to gain a better **understanding** of their **concerns** and **fears**
- This enables early action to address specific issues for teams, for example salespeople, who are the public face of the brand with customers

Piloting / volunteer program

- Implement a **volunteer program** to recruit **e-mobility promoters**
- **Pilot operational processes** to identify pitfalls early in a **rapidly changing technology**

Benefits

- Providing **benefits** for **car conversion** (e.g., provision of wallbox for charging at home)

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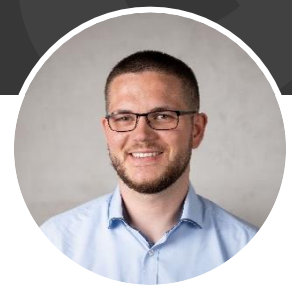

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Thank you

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